

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

TITLE V (RENEWAL) NO. V-05-064

FOME-COR COMPANY, LLC

GLASGOW, KY

JULY 13, 2006

COMPLETED BY: KENVIRONS, INCORPORATED

REVIEWER: JULIAN BRECKENRIDGE

SOURCE I.D. # 21-009-00060

SOURCE A.I. # 77

ACTIVITY # APE20050002, APE20050003, APE20060001

SOURCE DESCRIPTION:

Fome-Cor Company is a laminated foam board products manufacturing facility and has the potential to emit more than 100 tons per year (TPY) of volatile organic carbon (VOC); therefore, Fome-Cor is considered a Title V major stationary source. Fome-Cor is applying to operate an existing facility to use a continuous process that converts a mixture of polystyrene crystals, a nucleating agent, and a blowing agent into an extruded foam sheet. Specifically Fome-Cor produces laminated extruded foam board (paper-backed polystyrene) product (SIC 3086) from a production process consisting of generally three areas: (1) product grinding, mixing (plasticator), extrusion, and lamination; (2) product trimming and recycling; and (3) warehouse storage and packaging.

All pollutant emissions generated during the production include particulate matter (PM), primarily from product handling, scrap material handling, and recycling, and VOC and hazardous air pollutants (HAP) emissions emitted primarily as blowing agent lost during the curing process, and during lamination from application of an adhesive. PM emissions are controlled by a variety of fabric filters (baghouse and cyclones), which are considered integral components of the process equipment (i.e. recovery devices), since all collected material is recycled and reused. VOC emissions from the facility are uncontrolled.

Fome-Cor also employs two natural gas-fired boilers, and six process heaters in their production, which are also a source of criteria pollutants and HAP emissions. Insignificant activities include: seven additional process heaters less than or equal to 1.0 mmBTU/hr; ink printing; hot melt glue machine; packaging adhesive area; lab hood vent; and several additional sources associated with a Minor Revision application submitted by the plant after submittal of the Title V renewal application.

DAQ acknowledges receipt on June 30, 2005; of a renewal Title V air quality permit application for the Fome-Cor, LLC, Glasgow, KY facility. This represents the first renewal of the Title V air permit. The permit history is summarized as follows:

Permit Revision History

Rev #	Permit Type	Log #	Complete Date	Issuance Date	Summary of Action
---	Initial Issuance	G484 (51259)	03/04/00	01/10/01	Synthetic Minor Title V Air Permit issued for International Paper, Glasgow, KY facility
1	Administrative Revision	56214	02/20/04	11/19/04	Permit revision for a Name And Ownership Change from Nevamar Company, LLC to Fome-Cor Company, LLC
---	Renewal Application	NA	10/10/2005	---	Renewal Title V air permit application to operate a manufacturing plant for paper-backed polystyrene foam board production at Glasgow, KY
---	Minor Revision	NA	12/21/2005	---	Minor Revision application to install and operate several new affected facilities qualifying as Insignificant Activities
---	Minor Revision	NA	6/14/06	---	Minor Revision application for an addition of a new resin impregnated paper product in the laminator process.

The renewal Title V application was deemed complete on October 11, 2005.

Fome-Cor subsequently submitted a Minor Revision application, received at the Division for Air Quality on October 25, 2005. This revision included the construction of a new polystyrene resin storage silo, a new Thick Foam Line (TFL), and a new Reclaim Extrusion System. All affected sources associated with the new equipment qualify as Insignificant Activities, although the new silo will be listed in the permit along with the existing silos that are currently included in Section B of the permit. The new silo and Reclaim Extrusion System will operate in parallel with the existing storage silos and Regrind Process, respectively, and as such no increase in emissions over current permitted levels will occur. Emissions of PM and PM₁₀ emitted by the Thick Foam Line are less than the Insignificant Activity thresholds. A notice of deficiency was sent to the plant regarding the Minor Revision application, and a satisfactory response was received on December 21, 2005.

Moreover, another Minor Revision application was received at the Division for Air Quality on May 12, 2006. The revision dealt with an addition of a new resin impregnated paper product in the laminator process (KY EIS #E5.1A-E5.1D of Emission Unit 0AC). The resin on the paper contains less than 0.1% by weight formaldehyde, thus creating the potential for hazardous air pollutant emissions during its lamination process. After formulating the data the Division has come to the conclusion that the maximum potential emissions of formaldehyde were low enough to not result in a significant emissions increase and to not violate applicable requirements of a Title V permit. No

changes were made to the draft permit V-05-064 for this revision.

COMMENTS:

The following is a list of significant emission units with applicable regulations:

- a. Emission Unit OAF: Heat Exchangers and Process Heaters burning natural gas.

401 KAR 59:015 *New indirect heat exchangers* – applies limits for particulate matter, sulfur dioxide, and visible emissions from all indirect heat exchangers and process heaters located at this source. The permittee shall certify annually that only natural gas was fired in each unit. During periods when the boilers are fired with natural gas, the permittee is deemed to be in compliance with all applicable limits.

Criteria pollutant and HAP emissions from natural gas combustion are based on current AP-42 tables. There are no control devices associated with these units.

- b. Emission Units OAA, OAB, OAC, OAD, and OAE: Material Handling and Processing.

This emission unit includes the Hammermill, Storage Silos, Extrusion Process, Foam Recycle Process (Reclaim System), and the Warehouse Area (Product Storage and Shipping).

- i. 401 KAR 59:010 *new process operations* – applicable limits for particulate matter and visible emissions apply to these facilities. During periods of normal operation of the fabric filter, compliance shall be demonstrated by maximum process rates, proper operation of control equipment, and emission factors.

- ii. 401 KAR 63:020, *Potentially hazardous matter or toxic substances* – adhesives contain potentially hazardous toxic substances including styrene and vinyl acetate, which are HAPs. If units are added or modified, the source may be required to conduct dispersion modeling to demonstrate potential emissions of vinyl acetate and styrene do not exceed the reference concentrations (RfC).

- iii. In order to preclude the applicability of 401 KAR 51:017, and in accordance with the August 4, 2000 agreement with the City of Glasgow, Fome-Cor has agreed to limit source-wide total emissions of VOC to 225 tons per year or less for any consecutive 12 month period. However, since potential emissions of VOC are already well below 225 tons per year, no enforceable limit to preclude applicability of 401 KAR 51:017 are necessary in the permit. The source shall calculate VOC emissions as follows:

Monthly VOC Emission =

$$\begin{aligned} & \Sigma[\text{Monthly usage of each Blowing agent and adhesive}] \\ & \times [\text{Percentage VOC of each Blowing agents and adhesive}] \\ & + [\text{mmSCF of Natural Gas combusted}] \times [\text{AP-42 emission factor}] \end{aligned}$$

- c. Emission Units T1, T2, and T3: Storage Tanks.

No applicable regulations apply to storage tanks (see below). However, these tanks were included as significant equipment in the original permit V-00-040, therefore, permit language was carried over with respect to VOC limitations in Section D of the permit.

Comments:

PM/PM₁₀ emissions from material handling and processing sources are based on emission factors based upon engineering estimates carried over from the initial permit application and confirmed in the permit renewal application.

In the renewal application, the permittee requested a change in SCC for the OAC, Extrusion Process (3-01-999-99) and OAE (3-01-830-01), Product Storage and Shipping, which express VOC emissions in units of tons of product produced, to 3-99-999-99, which express VOC emissions in units of tons of VOC used. This change would better reflect VOC emissions because the VOC used is directly related to VOC emitted and not dependent on the quality of the product.

This change has resulted in revised emission factors used for calculating VOC emissions from the blowing agent and curing process as well as constituent HAP emissions in adhesive products. Facility wide VOC PTE was based on maximum annual throughput for pentane (55,254 gal/yr or 144 TPY) and adhesive (272,986 gal/yr or 1,174 TPY). VOC emissions from the extrusion process, #OAC, were the sum of pentane and styrene emissions. Emission factors are calculated based on stack test data from a 1993 stack test of OAC vents. Emission factors for the additional HAP volatiles from an ammonia containing adhesive are based on manufacturer's specifications included in the original permit application and a MSDS for a vinyl acetate based adhesive, included with the renewal application.

The permittee also requested that Tank T3 be allowed to contain either of two types of adhesive: a water base adhesive containing ammonia and several HAP compounds, and a low volatile vinyl acetate-containing adhesive. VOC PTE from each adhesive was calculated based on Tank T3 maximum annual throughput (272,986 gal/yr or 1,174 TPY) and vinyl acetate adhesive resulted in HAP emissions of vinyl acetate. This adhesive was used in calculating the source-wide PTE for this HAP.

Non-Applicable Regulations:

401 KAR 60:005 Section 3(e) (40 CFR 60.40c Subpart Dc) *Standards of performance for small industrial-commercial-institutional steam generating units that commences construction, modification, or reconstruction after June 9, 1989*

401 KAR 59:485 (40 CFR 60 Subpart Kb) does not apply to Tank T1 as it is a pressure tank per 40 CFR 60.110b(d)(2)

401 KAR 59:485 (40 CFR 60 Subpart Kb) does not apply to T2 and T3 as these tanks have a storage capacity of less than 75 cubic meters (19,813 gal).

No heat exchanger or process heater located at this source has a heat capacity greater than or equal to 10 mmBTU/hr; therefore, the following regulations do not apply:

40 CFR 60 Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction was Commenced After August 17, 1971.*

40 CFR 60 Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.*

Fome-Cor, LLC is not a major source for HAPs; therefore the following regulation does not apply:

40 CFR 63 Subpart DDDDD. *National Emission Standard for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters.*

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.